

Application No.: 10/604,276  
Amendment dated: March 23, 2009  
Reply to Office Action of October 23, 2008  
Attorney Docket No.: 21295.61

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### Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in this application:

### Listing of Claims

Claim 1 (currently amended): A method for monitoring and controlling a microscope with a biological specimen, comprising the following steps:

[[a]] ascertaining the information content of at least one image of the biological specimen;

[[b]] analyzing the information content using a specified target information content and a specified variation of the information content as the tolerance dimension;

[[c]] determining a control variable from the analysis of the information content, using a predetermined target value for influencing the information content;

[[d]] transferring the control variable to at least one non-scanning actuator of the microscope; and

[[e]] outputting a warning signal in the event of variations of the information content beyond the tolerance dimension to at least partially compensate for changes in the biological specimen.

wherein the specified target information content corresponds to information content of the biological specimen at a point in time before the at least one image of the biological specimen is taken.

Claim 2 (previously presented): The method as defined in Claim 1, wherein depending on the result of the analysis of the information content, several different control variables and non-scanning actuators of the microscope are determined and activated.

Claim 3 (original): The method as defined in Claim 1, wherein the method for monitoring and controlling the microscope is initiated by a user.

Claim 4 (original): The method as defined in Claim 3, wherein the method is started by the user by means of a switch.

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Claim 5 (original): The method as defined in Claim 1, wherein the microscope is embodied as a scanning microscope.

Claim 6 (currently amended): An arrangement for monitoring and controlling a microscope with a biological specimen, comprising:

- a detector unit for acquiring at least one image of the biological specimen,
- at least one input port for a control variable,

- a computer system associated with the microscope, wherein the information content of the at least one image of the biological specimen can be ascertained using the detector unit and the computer system; the computer system analyzes the information content using a specified target information content and a specified variation of the information content as the tolerance dimension, and determines a control variable therefrom; from the analysis of the information content, using a predetermined target value for influencing the information content; and

- at least one non-scanning actuator associated with the microscope, wherein the actuator converts the control variable allocated to the actuator into a change in the information content of the image within a tolerance dimension to at least partially compensate for changes in the biological specimen.

- wherein the specified target information content corresponds to information content of the biological specimen at a point in time before the at least one image of the biological specimen is taken.

Claim 7 (original): The arrangement as defined in Claim 6, wherein a means for outputting a warning signal is provided, which means makes a warning signal available to the user if the variations in the information content lie outside the tolerance dimension.

Claim 8 (previously presented): The arrangement as defined in Claim 6, wherein several non-scanning actuators are associated with the microscope, each of which receives a different control variable.

Claim 9 (original): The arrangement as defined in Claim 6, wherein a switch is provided with which a user initiates the automatic monitoring of the microscope.

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Claim 10 (original): The arrangement as defined in Claim 6, wherein the switch is embodied as a click button on a display associated with the computer system.

Claim 11 (original): The arrangement as defined in Claim 6, wherein the microscope is embodied as a scanning microscope.

Claim 12 (currently amended): A computer-usable medium storing computer-usable program code for computer system connected to a microscope with a biological specimen carrying out a method comprising the steps:

[[a]] ascertaining the information content of at least one image of the biological specimen;

[[b]] analyzing the information content at least one image using a specified target information content and a specified variation of the information content as the tolerance dimension;

[[c]] determining a control variable from the analysis of the information content, using a predetermined target value for influencing the information content;

[[d]] transferring the control variable to at least one non-scanning actuator of the microscope to at least partially compensate for changes in the biological specimen; and

[[e]] outputting a warning signal in the event of variations of the information content beyond the tolerance dimension.

wherein the specified target information content corresponds to information content of the biological specimen at a point in time before the at least one image of the biological specimen is taken.